



Northern Great Plains “Vital Signs” Monitoring Program

**Annual Meeting
2005**

Rapid City SD

Fancy's Editorial

How I&M Monitoring is Different

- (1) **A long-term, ecological monitoring perspective.** This program supports scientists needed for long-term monitoring of ecological elements and processes. Turnover of personnel and technology must be expected. We therefore put greater emphasis on planning, documentation, and protocols.
- (2) **Integration and coordination among parks, programs, and agencies.** Vital signs monitoring is only one part of the larger science effort to track resource conditions. Need to coordinate with other programs focused on air, fire, T&E species, exotic plants and other efforts to develop an overall monitoring program with close links to park management decision-making.
- (3) **Emphasis on Information Management.** A primary purpose of this program is to develop, organize, and make available natural resource data and to contribute to the Service's institutional knowledge by facilitating the transformation of data into information through analysis, synthesis, and modeling.

“VITAL SIGNS”

FY04 Projects



Vegetation Monitoring



- Amy Symstad of USGS-BRD has collected existing plant data, coordinated with parks, and developed a draft monitoring protocol.
- Has played a significant role in integrating I&M, Fire Effects, and EPMT



From Interim Vegetation Report

Table 4b. Preliminary park staff ranking of proposed monitoring projects to their park, where 1 is the most important.

Potential Plant Monitoring Project	AGFO	BADL	DETO	FOLA	FOUS	JECA	KNRI	MNRR	MORU	NOB	SCBL	THRO	WICA	mean
Ecosystem Health/Fire Effects (plant community composition and diversity)	1	1	1	1	1	3	1	1	1	3	1	1	1	1.3
Invasive species early warning		2	2	8	3	4	9	7.5	3	5	4	5	3	4.6
Invasive species treatment assessment		3	3	3	4	1	10	7.5	2	7	3	4	3	4.2
Grazing effects (exclosures)		10		13			11	16		11		8	3	10.3
Air pollution effects		7	5	11		7	7	13	12	13		6	2	8.3
Rare plant communities		6	11	6	6	5		10	6	1	6	3	4	5.8
Restoration assessment		4	9	2	2	9	2	5.5	4	12	5	12	3	5.8
Effects of complete absence of fire		8	14	7			8	9	13	8		9		9.5
Invasive species mapping		9	7	4	5	2	5	4	8	6	2	2	3	4.8
Browse rates/Deer effects	2	14	12	15		8	6	15	11	15		10	3	10.1
Riparian tree recruitment		13	4	10	7		4	3	10	9		7	4	7.1
Rock-climbing impact			8	17					6	10				10.2
Canal seepage effects				9					9					9.0
Pathogens/pests on plants		12	10	16			3	14	5	14		13	4	10.1
Woody encroachment into prairie		11	6	12			11	12		4	7	14	2	8.8
Rare plant population(s)		5	13	5		6		11	7	2	8	11	3	7.1
Flood regime change effects								2						
Woody increase in forest understory								5.5						

Potential Frequency of Plot Visits

(d) Three-panel design: one on, two off revisit schedule

Panel	Year							
	1	2	3	4	5	6	7	8
A	XB			X		B	X	
A	X		B	X			X	B
B		BX			X		B	X
B		X		B	X			X
C	B		X			BX		
C			X		B	X		

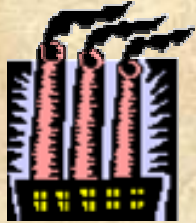
Potential Distribution of Plots

Park	Total acres	NPS-owned acres	% of Network area	# of sites based on area
AGFO	3,055	2,270	1.06	8
BADL	244,300	100,000	46.63	354
DETO	1,360	1,360	0.63	5
FOLA	833	831	0.39	3
FOUS	450	410	0.19	1
JECA	1,355	1,355	0.63	5
KNRI	1,758	1,600	0.75	6
MNRR	33,389	250	0.12	1
MORU	1,238	1,200	0.56	4
NIOB	21,035	0	0.00	0
SCBL	3,003	2,930	1.37	10
THRO	70,446	69,250	32.29	245
WICA	28,295	33,000	15.39	117
Total		214,456		759

Water Quality



- Dr. Troelstrup and/or his staff visited each park to discuss water resources.
- They made 2 runs of field sampling to collect baseline information.
- His staff includes Jill Jensen (graduate student), a GIS technician and a lab technician



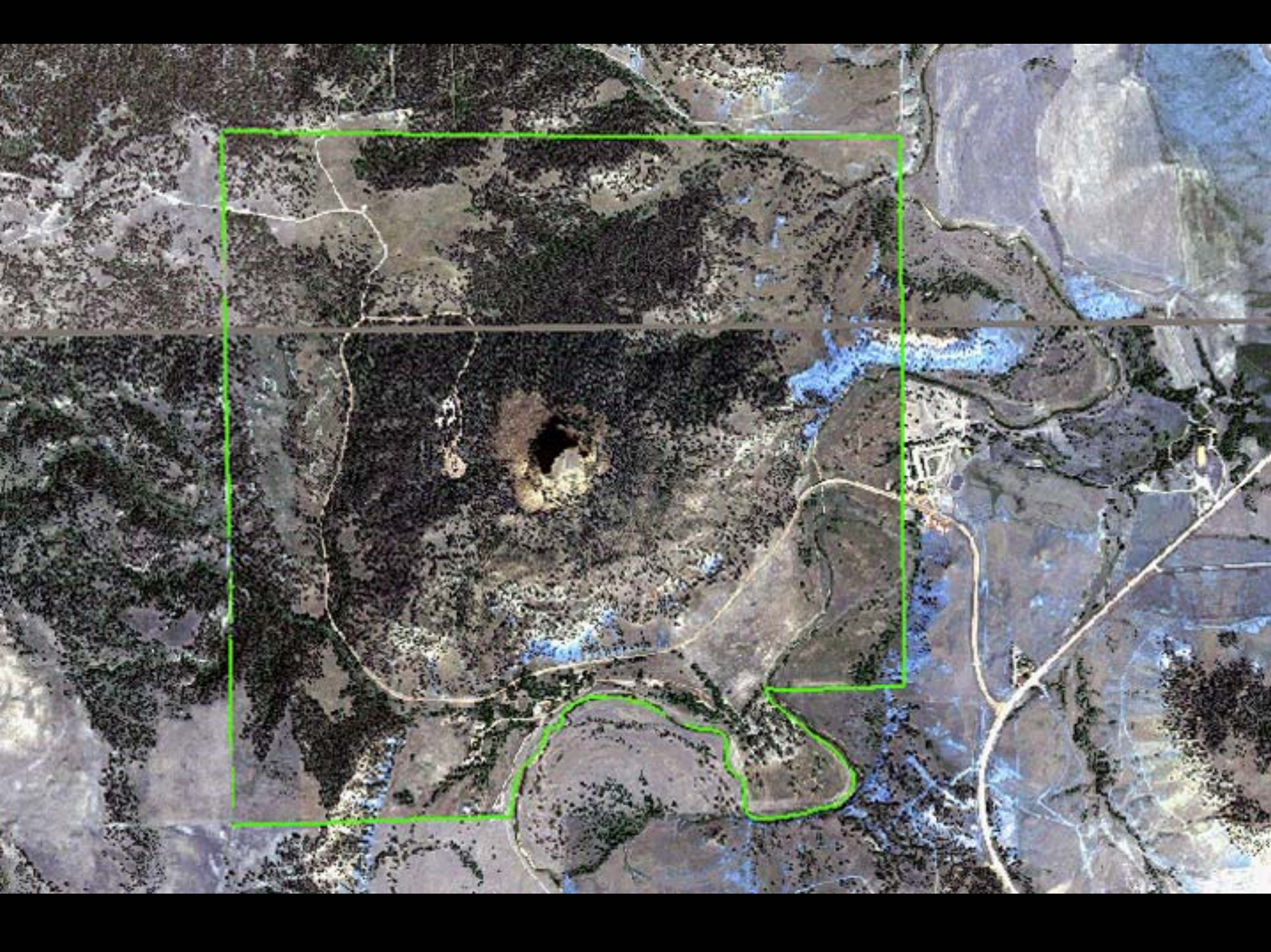
Air Quality



- David Pohlman is MWRO Air Quality Specialist assisting us
- Nearing completion on air quality report for NGPN
- Will continue to assist us in air quality monitoring for duration of planning effort

Data Mining and Management

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Vital Signs Plan

NGPN Monitoring Plan ver 4.doc - Microsoft Word


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**NORTHERN GREAT PLAINS
NETWORK**

Vital Signs Monitoring Plan



NATIONAL PARK SERVICE
January 26, 2005
Draft

SIGNATURE PAGE

Superintendent Agate Fossil Beds National Monument	Date	Superintendent Mesa Verde National Park	Date
Superintendent Badlands National Park	Date	Superintendent Mount Rushmore National Memorial	Date
Superintendent Devils Tower National Monument	Date	Superintendent Niobrara National Scenic River	Date
Superintendent Fort Laramie National Historic Site	Date	Superintendent South Dakota National Monument	Date
Superintendent Fort Union Trading Post National Historic Site	Date	Superintendent Theodore Roosevelt National Park	Date
Superintendent Jewel Cave National Monument	Date	Superintendent Wind Cave National Park	Date
Superintendent Knife River Indian Villages National Historic Site	Date	Inventory & Monitoring Coordinator Northern Great Plains Network	Date

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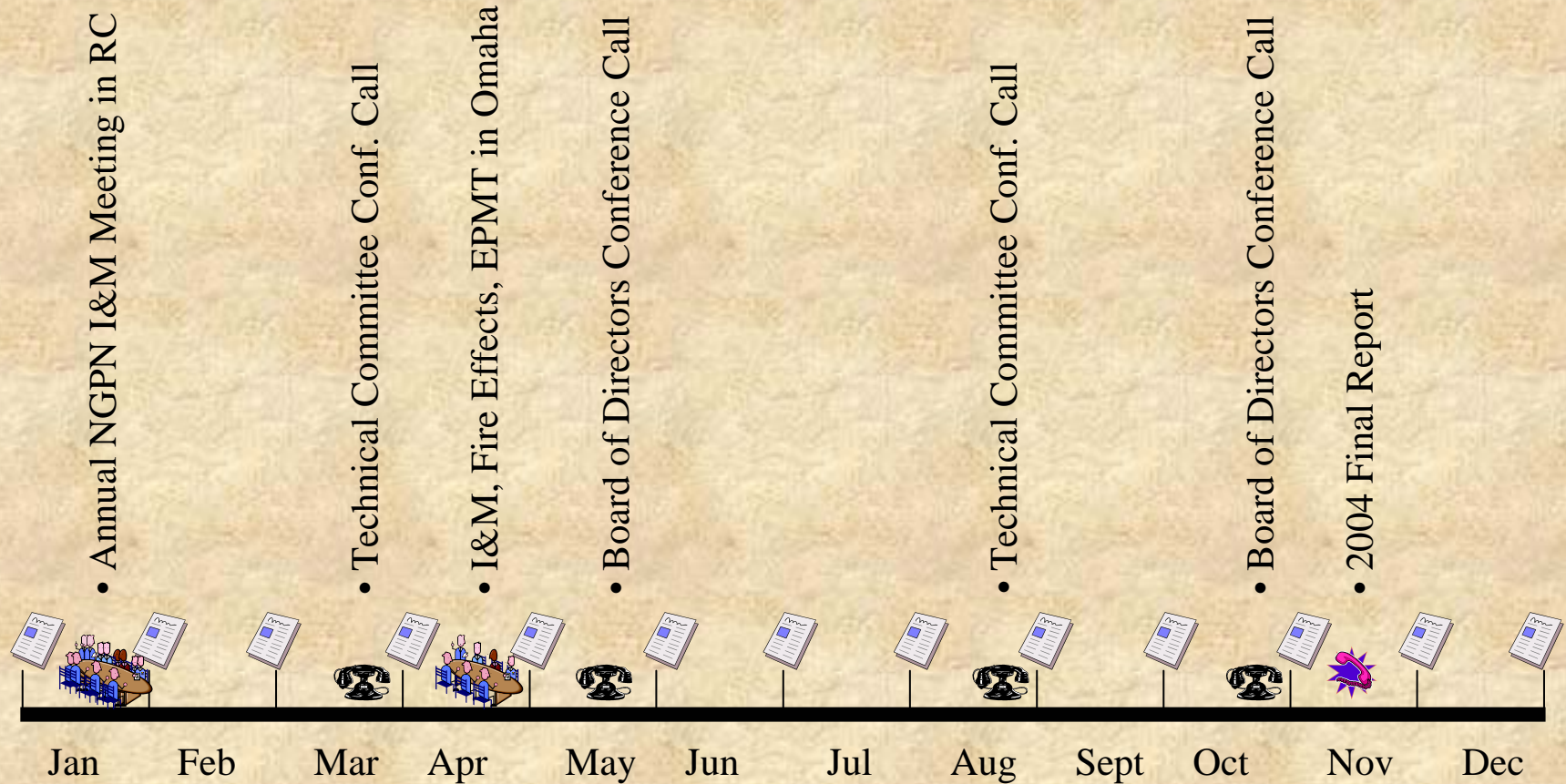
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FY04 Monitoring Expenditures



- 9% went to agreements for field work
- 82% went to Network personnel
- 7% went to operations, administration, assessments, etc.
- 2% went to travel

Meetings & Coordination in 2004



Vital Signs

What's Planned for FY05



FY05 Tasks

- Complete Phase I of Vital Signs Plan
- Continue developing vegetation portion of monitoring plan
- Develop EPMT, Fire Effects, I&M Integration Plan
- Continue developing aquatic portion of monitoring plan
- Conduct Scoping Workshop with outside experts and stakeholders
- Develop tentative list of Vital Signs

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FY05 Commitments

Assessments	=	\$6k	(taken off the top by WASO and MWRO)
Licht	=	\$72k	(at a 75:25 split with MWRO NR division)
Brumm	=	\$64k	
Wilson	=	\$30k	(in FY05 a 50:50 split with MORU)
Bynum	=	\$30k	(seasonal employee)
NEKOTA	=	\$2k	(for contracting and other support)
Admin Support	=	\$3k	(by DETO for payroll and travel)
Travel	=	\$10k	(travel for I&M staff and Technical Committee)
Misc	=	\$10k	(equipment, supplies, unknowns)

Total Commitments = \$227k of \$306k total

Personnel for FY2005

Dan Licht - Inventory Coordinator (0.75 FTE)

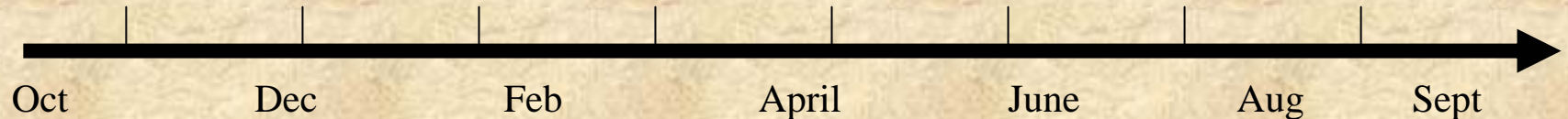
Marci Wilson – Biological Technician

Joel Brumm – Data Manager

Mike Bynum – Biological Technician

Admin Clerk ?

Bio Techs ?



FY05 Discretionary



Admin Clerk	=	\$5k	(perm. fulltime; late in the FY)
Bio. Tech	=	\$8k	(summer hire for NPSpecies work)
I&M Meeting	=	\$10k	(travel for experts; hope to have in Sept.)
Veg. Pilot Study	=	\$20k	(bio techs to test veg monitoring protocol)
SDSU Water Proj,	=	\$15k	(needed for 3rd run of water sampling)
Historical Imagery	=	\$10k	(for all parks)
Plant Followup	=	\$2k	(additional plant work may be needed)
ND Plant Cert	=	\$2k	(need to certify plant lists for ND parks)
Computers	=	\$5k	(new units)

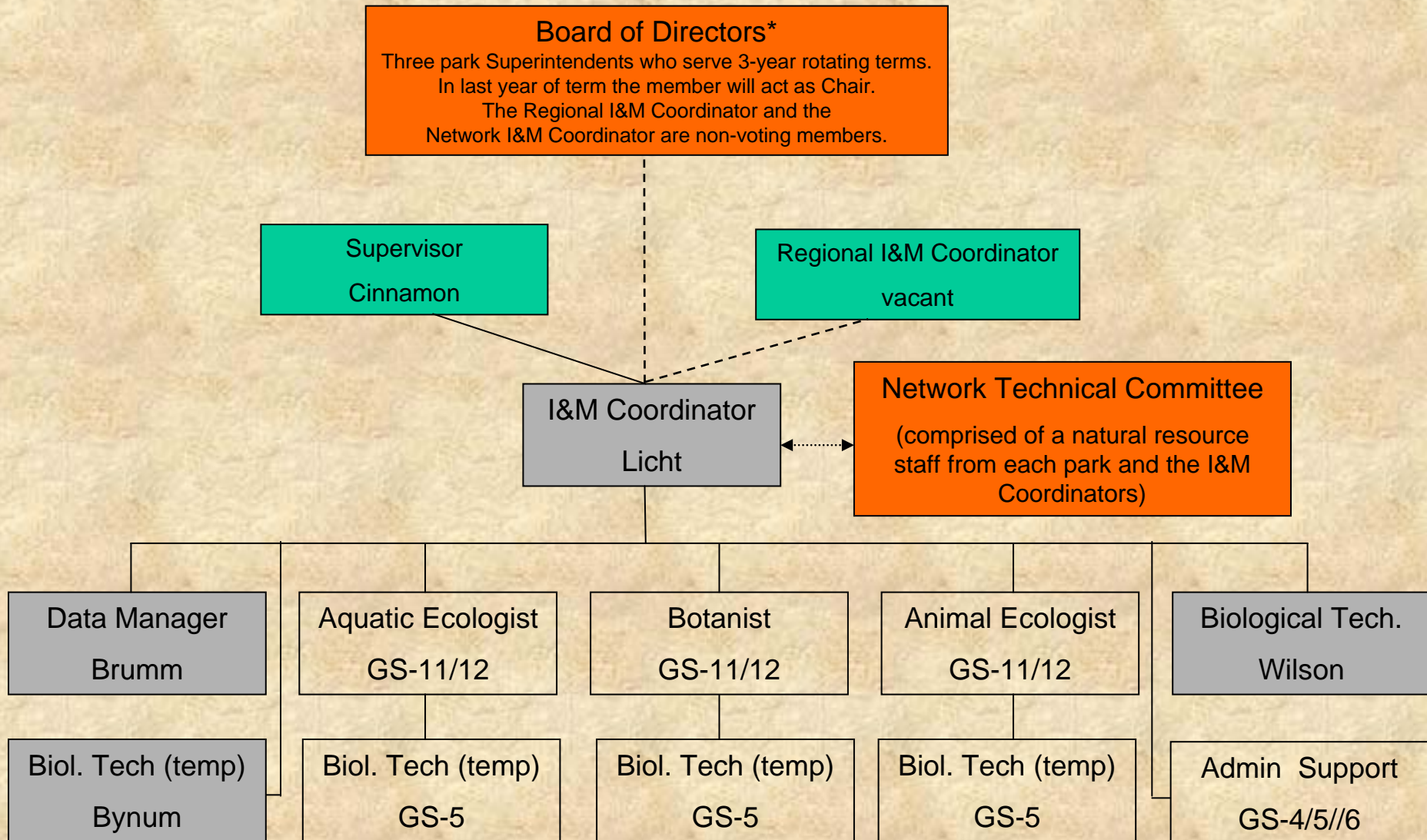
Total Commitments = \$77k of \$306k total

Miscellaneous Issues



NORTHERN GREAT PLAINS I&M PROGRAM ORGANIZATION CHART

As of January 31, 2005



FY05 Board of Directors

- Ruthann Knudson (Chair)
- Andy Banta
- Linda Stoll
- MWR I&M Coordinator - vacant*
- Dan Licht*

On October 1, 2005 Knudson retires from Board, Banta becomes Chair, and Hedren (NIOB) becomes a member.

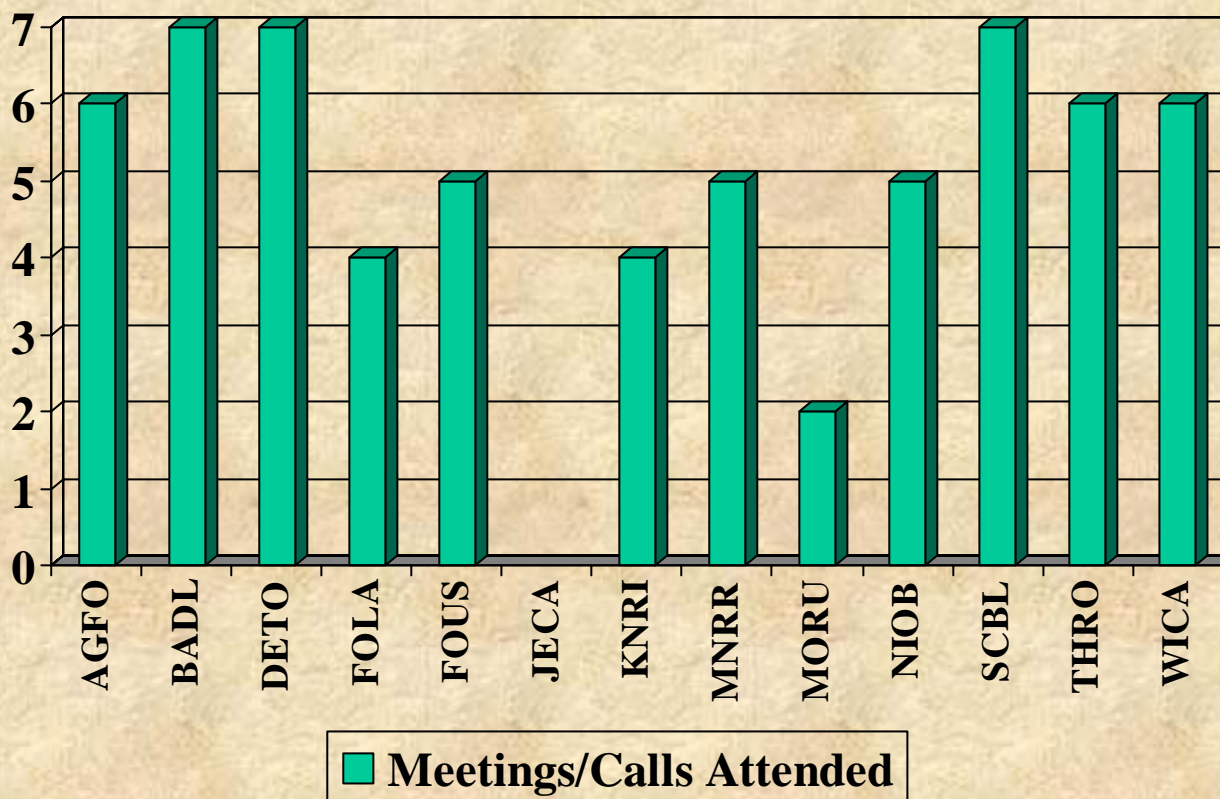
* = Non-voting member

Network I&M Technical Committee

- | | |
|---|--------------------------|
| • Agate Fossil Beds NM | Ruthann Knudson |
| • Badlands NP | Brian Kenner |
| • Devils Tower NM | Jim Cheatham |
| • Fort Laramie NHS | Ted Benson |
| • Fort Union Trading Post NHS | Andy Banta |
| • Jewel Cave NM | Todd Suess |
| • Knife River Indian Villages NHS | John Moeykens |
| • Missouri NRR | Wayne Werkmeister |
| • Mount Rushmore NMEM | Eric Nelson |
| • Niobrara NSR | Carmen Thomson |
| • Scotts Bluff NM | Bob Manasek |
| • Theodore Roosevelt NP | Penny Knuckles |
| • Wind Cave NP | Dan Roddy |
|
 | |
| • Midwest Region I&M Coordinator* | vacant |
| • Network I&M Coordinator (Chair)* | Dan Licht |

* = Non-voting member

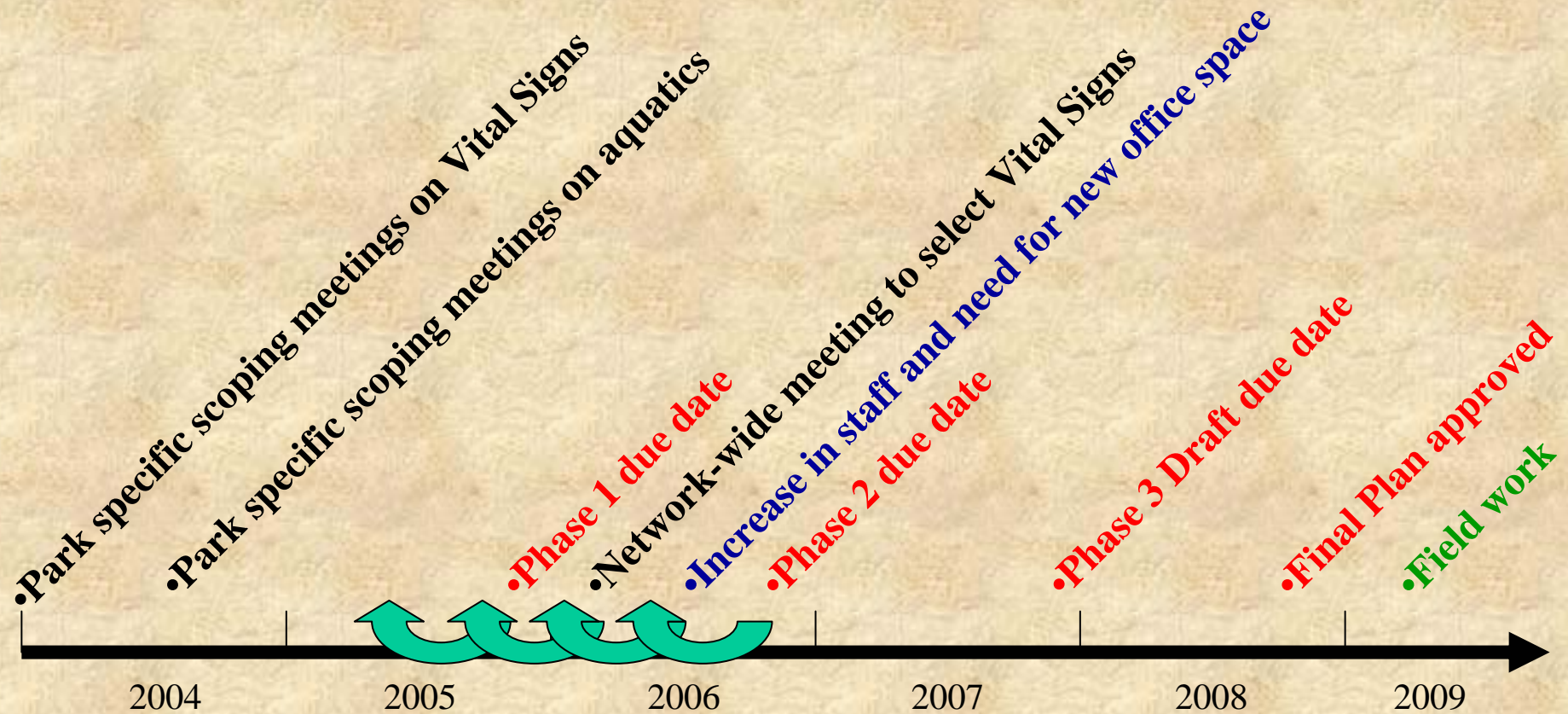
Technical Committee Meeting/Call Participation 2003-present



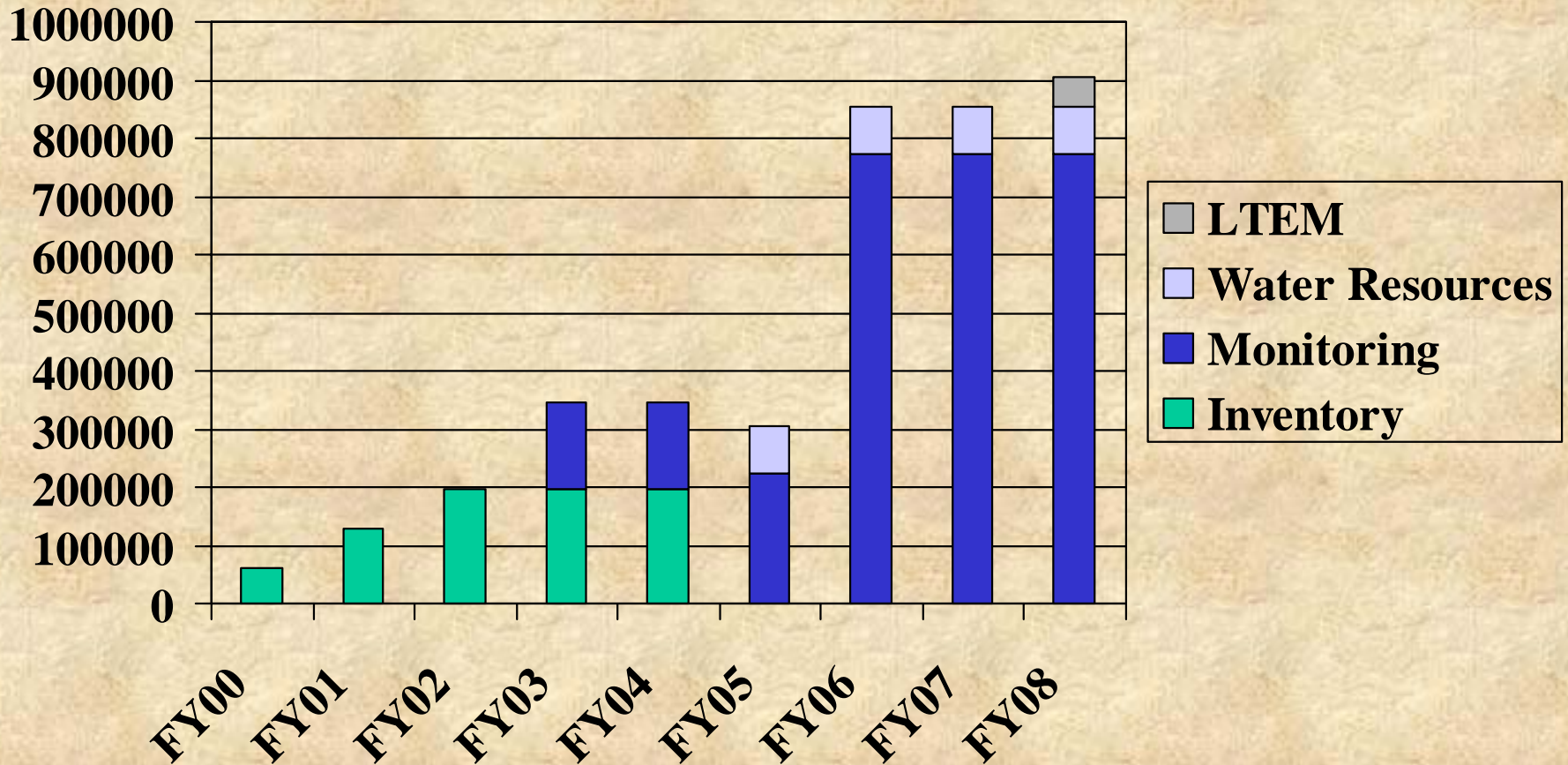
Current Status of Administration and Support

- Alpha code for program is NGPN. Org/Account is 2107
- I&M Coordinator currently supervised by Steve Cinnamon. Permanent fulltime I&M Coordinator will be supervised by the “Host Park” Superintendent. Leadership and oversight by the Board and MWR I&M Coordinator.
- Contracting, Purchasing, Agreements handled by Ron Eilefson and others at MORU
- SPO is currently MWRO.
- Recruitment and classification by MWRO.
- Budget assistance by MWRO
- Travel and T&A by DETO for FY05 (except Licht by MWRO)
- IT support by Weichler

The Future!



Funding Chronology and Amounts for NGPN



FY06 Budget

(Projected to be \$855k)



Commitments

Assessments	=	\$17k	(taken by WASO and MWRO)
I&M Coordinator	=	\$104k	(assume fulltime)
Data Manager	=	\$71k	
Bio. Tech	=	\$63k	(assume fulltime)
Bio. Tech (temp)	=	\$30k	(seasonal employee)
NEKOTA	=	\$2k	(for contracting and other support)
Admin Support	=	\$3k	(by DETO for payroll and travel)
Travel	=	\$10k	(travel I&M/Technical Committee)
Misc	=	\$10k	(equipment, supplies, unknowns)

Total commitments = \$310k. Other expenditures could be aquatic ecologist; plant ecologist; air quality, water quality, and weather monitoring equipment; vehicle, synthesis and analysis of old data, etc.

Office Location?

Temporarily at MORU in Sculptor's Studio



Editorial

- Many past “monitoring” efforts initiated in the past that have fizzled and died
- Many old studies were not well captured in park files – suggest use of research permit system
- Lack of clear vision Desired Future Conditions (DFCs) for natural resources is problematic

A photograph of two children, an older boy and a younger child, standing in a field and looking out at a sunset. The children are silhouetted against the bright, low sun, which creates a warm orange and yellow glow on the horizon. The sky is a mix of light blue and pinkish-purple. The foreground is dark, showing the silhouettes of the children and the grassy field. The overall mood is peaceful and contemplative.

The End